Jemena Gas Networks

AER meeting 22 July 2013

Agenda

1. JGN operating context

2. Gas is a fuel of choice in NSW

3. JGN historical demand and trends during current AA period

1. JGN operating context

– History of JGN's network

– Network footprint

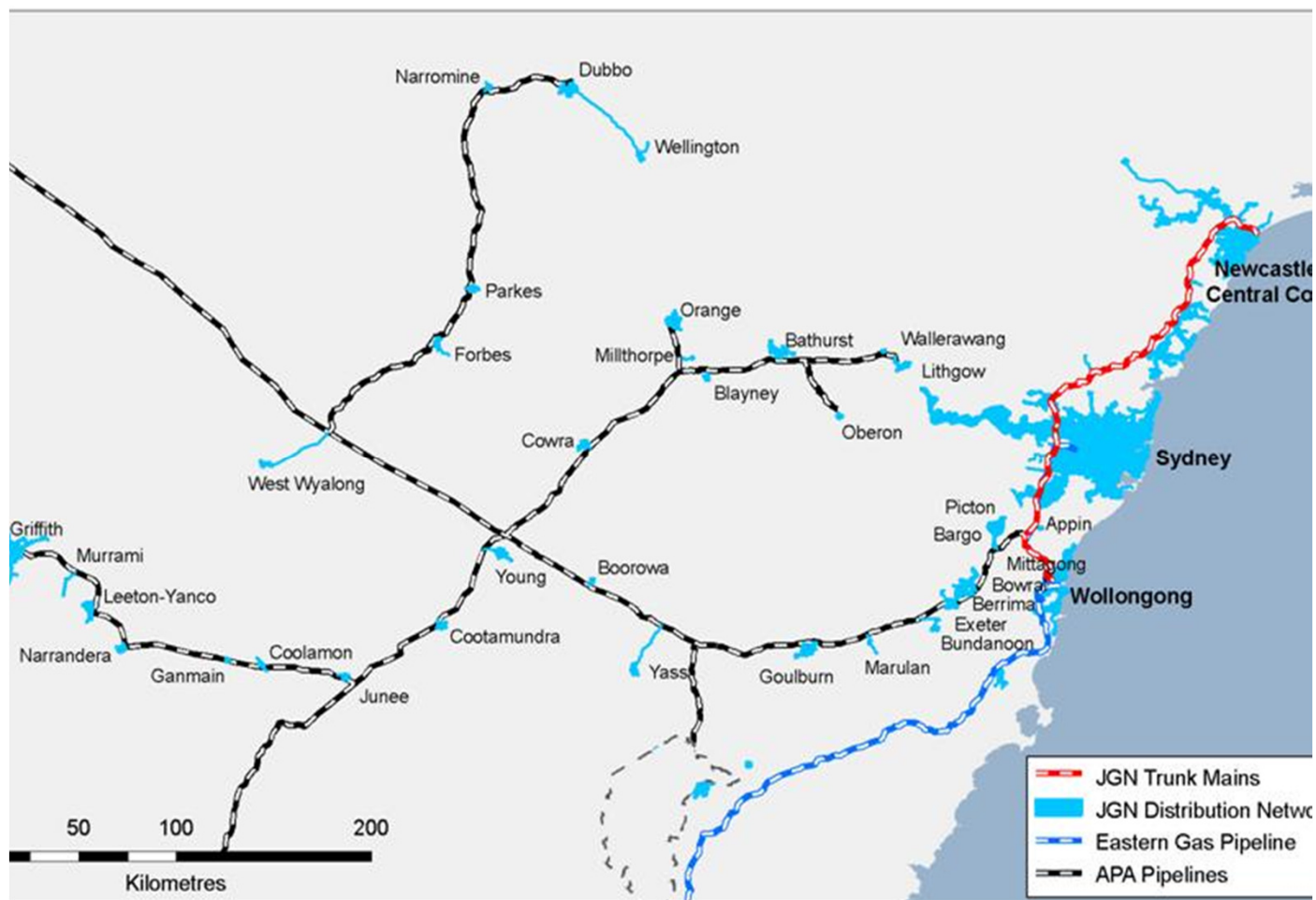– JGN residential penetration

– NSW gas connections

History of JGN's gas network

- Our network was initially established in 1837
  - comprising extensive low (LP) and medium pressure (MP) system
  - delivering manufactured gas
- Natural gas (NG) came to NSW from SA in 1976
  - we developed high pressure network to serve industry
  - our trunk and primary system became an integral part of the distribution system
- We converted the mp/lp network to NG from mid 80's to late 90's
- We undertook major mains renewal program, "Goldline", completed in mid 1990s
- IPART introduced third party access in 1997
  - we established a ring-fenced network company
  - we unwound an $80 million pa cross subsidy to domestic gas users from industrial users
- Second supply source from VIC was connected in 2000 (via the EGP)
- Now coal seam methane supply sources are emerging

Network Footprint

JGN residential penetration

- Only around 35% of dwellings in JGN's footprint are connected to gas:
    - Total dwellings (houses and units) – 3.1M
    - Total dwellings connected to JGN –1.1M
- In the JGN footprint, about 295,000 houses have gas available (on line of main) but are not connected
- Economic growth is important to increase residential penetration through
    - Infill
    - New homes
    - Energy conversion
    - Medium density housing
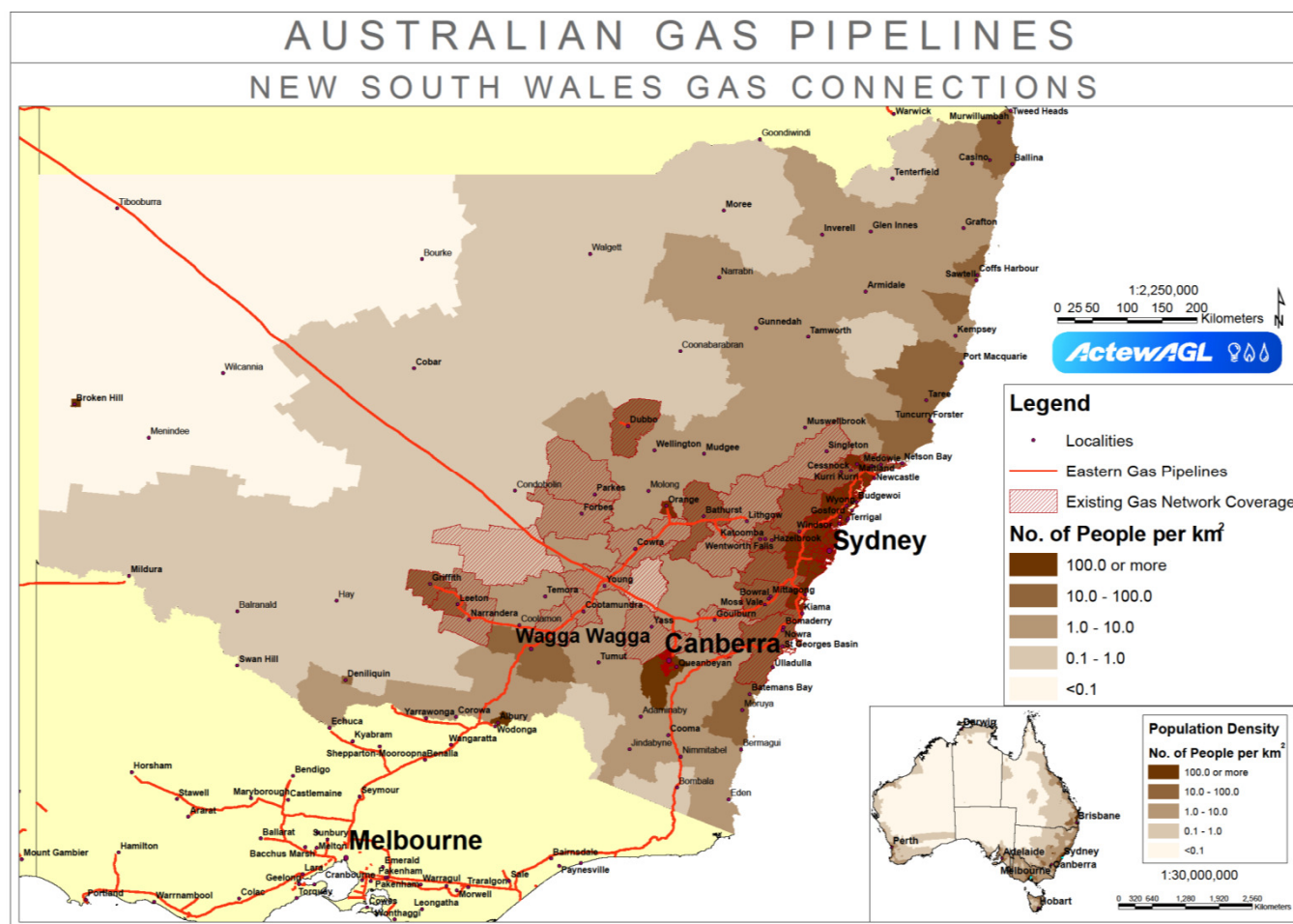
NSW gas connections

2. Gas is a fuel of choice in NSW

- Overview
- Australian energy sources
- Average consumption per connection
- Heating degree days
- Factors influencing gas consumption
- Attitudes towards natural gas versus electricity
- Average NSW residential consumption
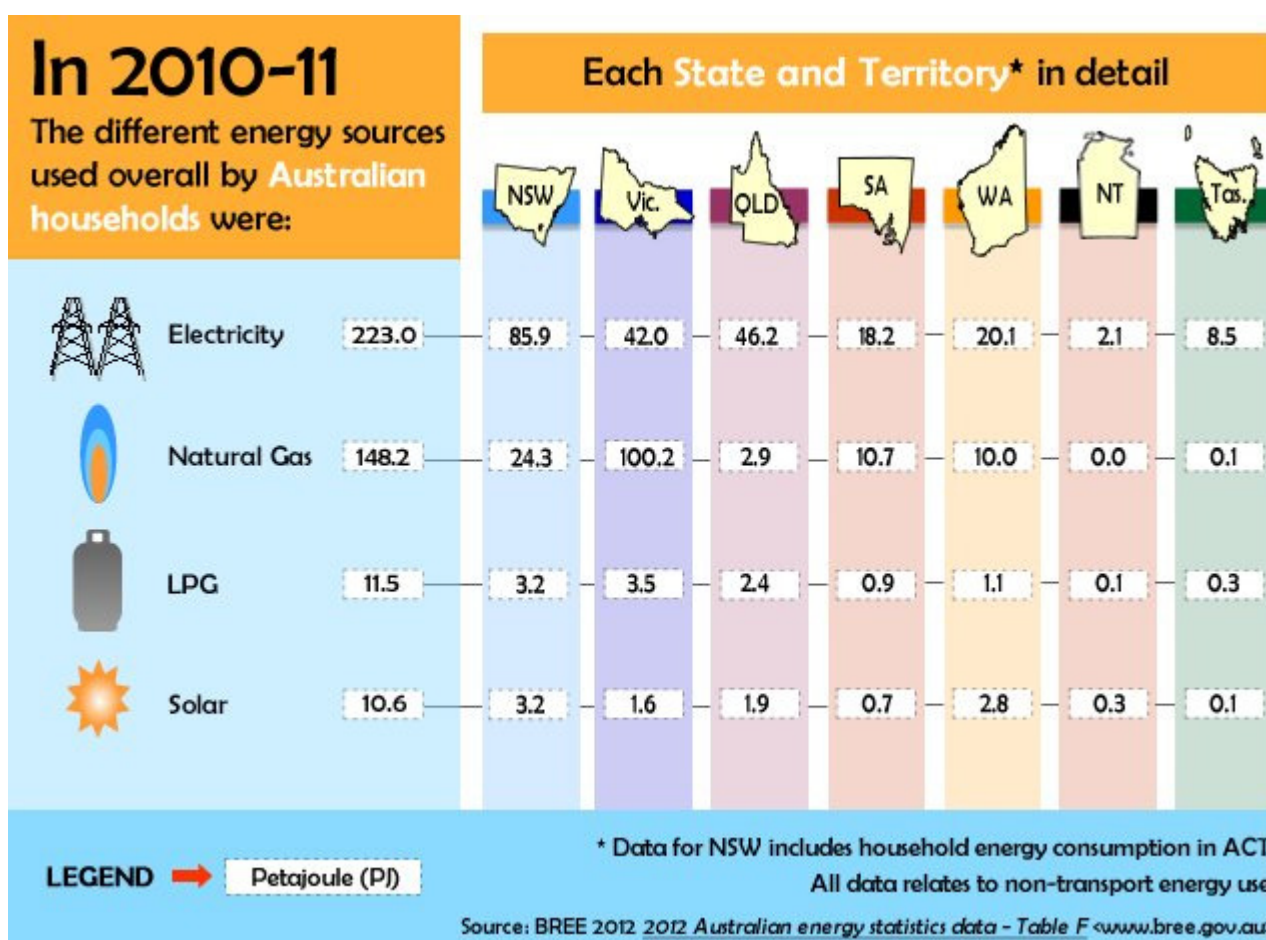- Gas the natural choice

Overview

- NSW has low residential gas penetration rates compared with VIC:
  - creation of JGN network was based on pure incremental economic return of a private company rather than one created by policy (full reticulation) of a Government owned utility (e.g. Gas and Fuel in VIC)
  - NSW has under half the heating degree days of VIC over the last 20 years
- NSW gas competes with electricity and solar (rebates) for heating and hot water
- Average residential gas consumption in NSW is declining
- There is dislocation of gas and electricity prices:
  - the price of gas is expected to increase at a greater rate than electricity, particularly over the next five years
- To improve utilisation of its network, JGN needs to:
  - increase its customer base by directly marketing to electricity customers to connect to gas
  - market to its existing customers to select gas appliances
  - maintain price structures that support our marketing efforts and grow efficient utilisation of the network

Australian energy sources

In 2010-11
The different energy sources used overall by Australian households were:

Each State and Territory* in detail

	Overall	NSW	Vic.	QLD	SA	WA	NT	Tas.
Electricity	223.0	85.9	42.0	46.2	18.2	20.1	2.1	8.5
Natural Gas	148.2	24.3	100.2	2.9	10.7	10.0	0.0	0.1
LPG	11.5	3.2	3.5	2.4	0.9	1.1	0.1	0.3
Solar	10.6	3.2	1.6	1.9	0.7	2.8	0.3	0.1

LEGEND ➡ Petajoule (PJ)

* Data for NSW includes household energy consumption in ACT
All data relates to non-transport energy use

Source: BREE 2012 2012 Australian energy statistics data – Table F <www.bree.gov.au>

Average consumption per connection

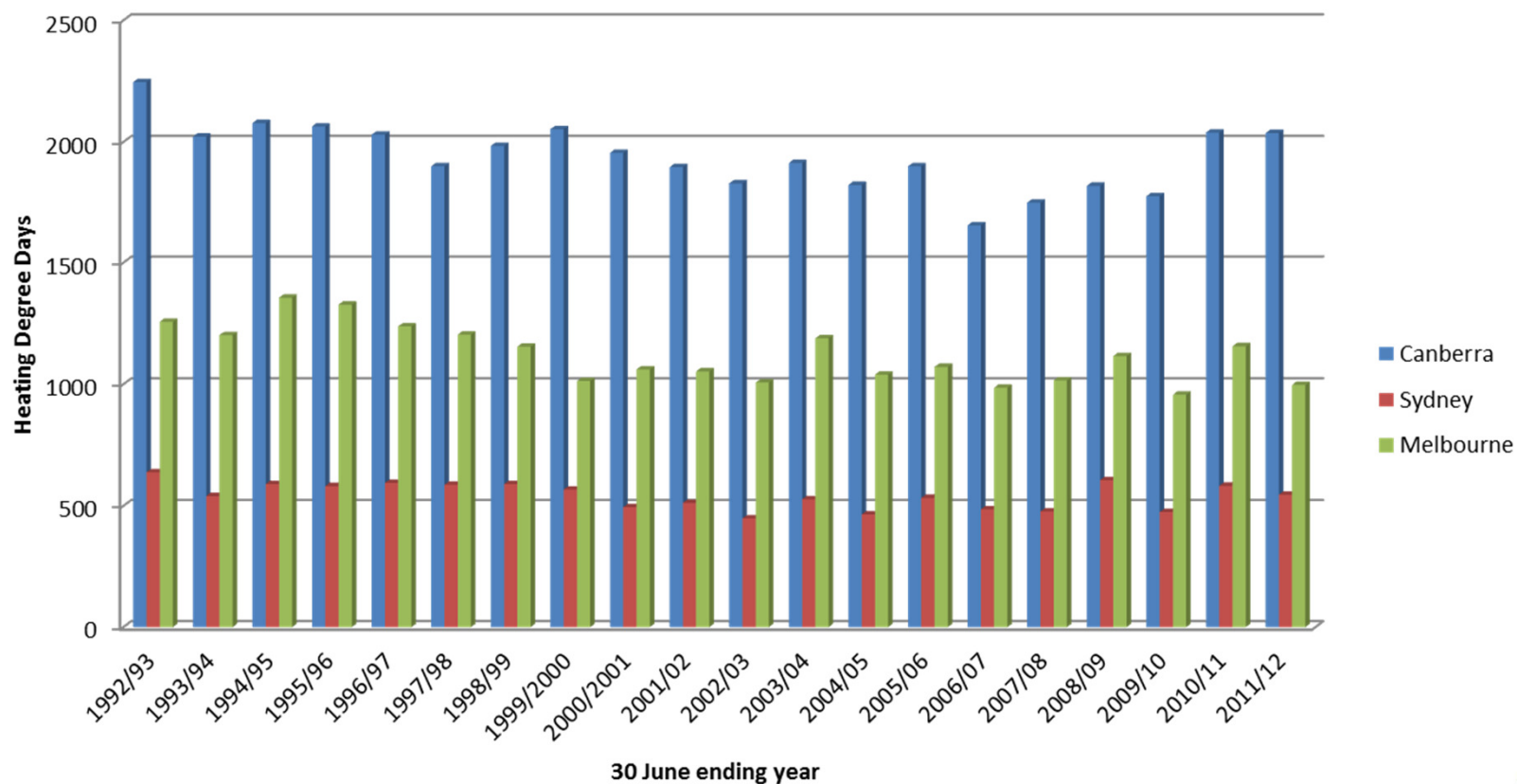|	NSW	VIC
Electricity consumed (per slide 10) – PJ	85.9	42.0
Connected electricity customers *	3.1m	2.3m
Average electricity consumption per connection - KWh	7,725	5,136
Gas consumed (per slide 10) – PJ	24.3	100.2
Connected gas customers *	1.3m	1.8m
Average gas consumption per connection - GJ	18.90	54.65

* source: 2012 connected customers adjusted down for 2012 growth per Electricity Gas Australia 2013, ESAA

Heating degree days

Last 20 Years of Heating Degree Days

Legend:
- Canberra
- Sydney
- Melbourne

Y-axis: Heating Degree Days (0 to 2500)

X-axis (30 June ending year): 1992/93, 1993/94, 1994/95, 1995/96, 1996/97, 1997/98, 1998/99, 1999/2000, 2000/2001, 2001/02, 2002/03, 2003/04, 2004/05, 2005/06, 2006/07, 2007/08, 2008/09, 2009/10, 2010/11, 2011/12

Factors influencing gas consumption

- In NSW natural gas is a fuel of choice:
  - NSW is not a natural gas market due to climate
  - It less than universal availability and a close price differential with electricity
- Two core gas products - space heating and water heating
  - Sydney's Mild climate limits demand for central heating
  - Climate warming trend and increasing popularity of reverse cycle air conditioning is further reducing the heating requirement
- NSW Government mandatory BASIX scheme for energy efficiency in buildings is further reducing heating requirement, and changing the requirements of home builders
- Appliance efficiency improvements and water conservation measures have reduced average consumption for water heating
- Overall impact is declining average load per site:
  - Problem compounded by declining average load of new connections
- It has always been necessary to actively develop the NSW gas market to find new customers:
  - Continued active management of network development remains a key priority

Attitudes towards natural gas vs. electricity

Consumer perceptions on the benefits of natural gas compared with electricity
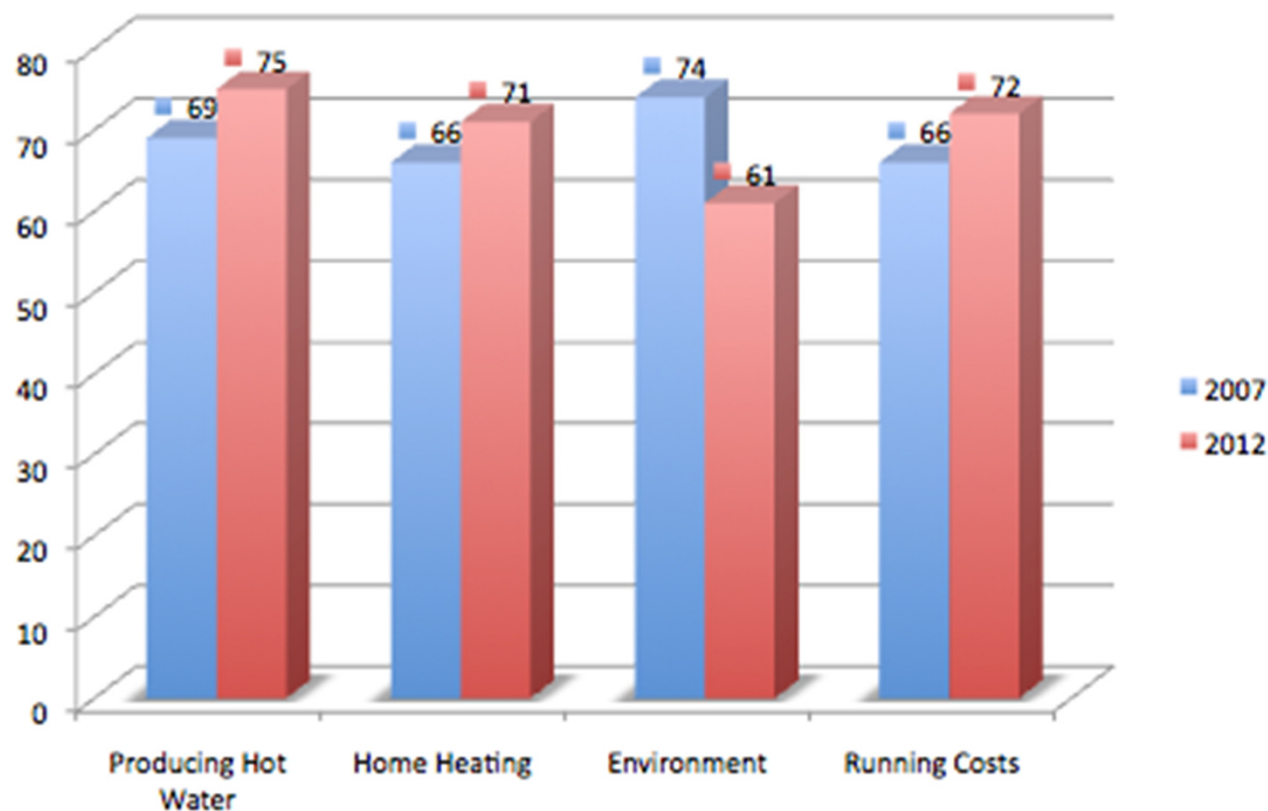
Average residential consumption

- NSW average residential consumption is declining and low compared to colder climates:
  - NSW Residential Market is dominated by mild coastal regions - Sydney, Newcastle and Wollongong where gas is not seen as an essential service
  - About 70% of homes with gas available to them choose to connect
  - Many pockets don't have gas available
  - Average annual residential consumption is about 21.5 GJ per site
  - 25% of residential sites consume less than 10 GJ

Natural gas; the natural choice

Existing premises (all electric) connecting to gas
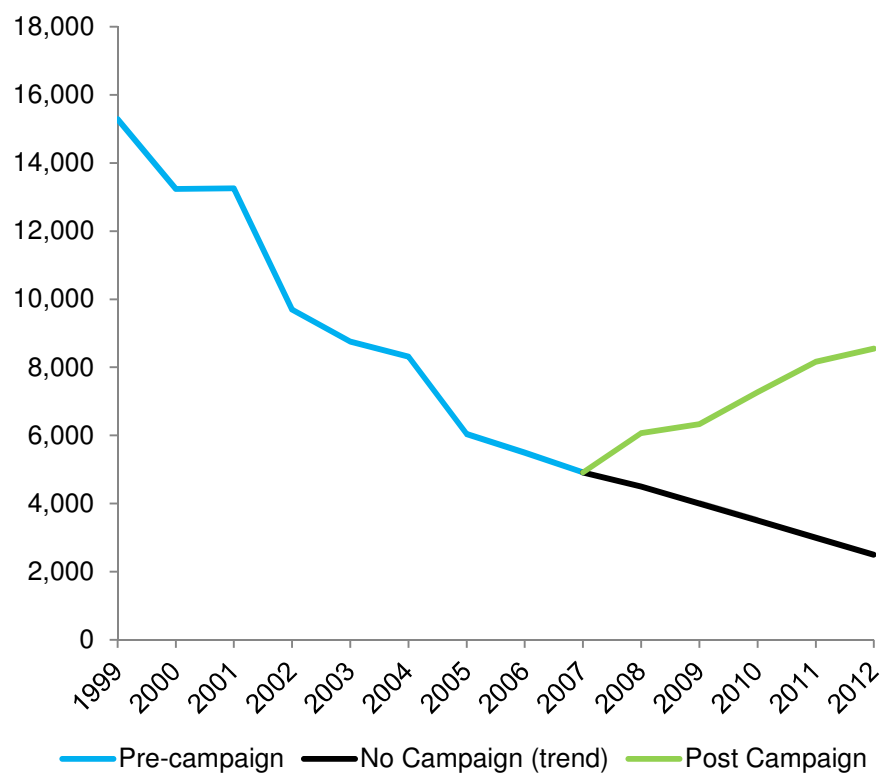
Average Residential Load
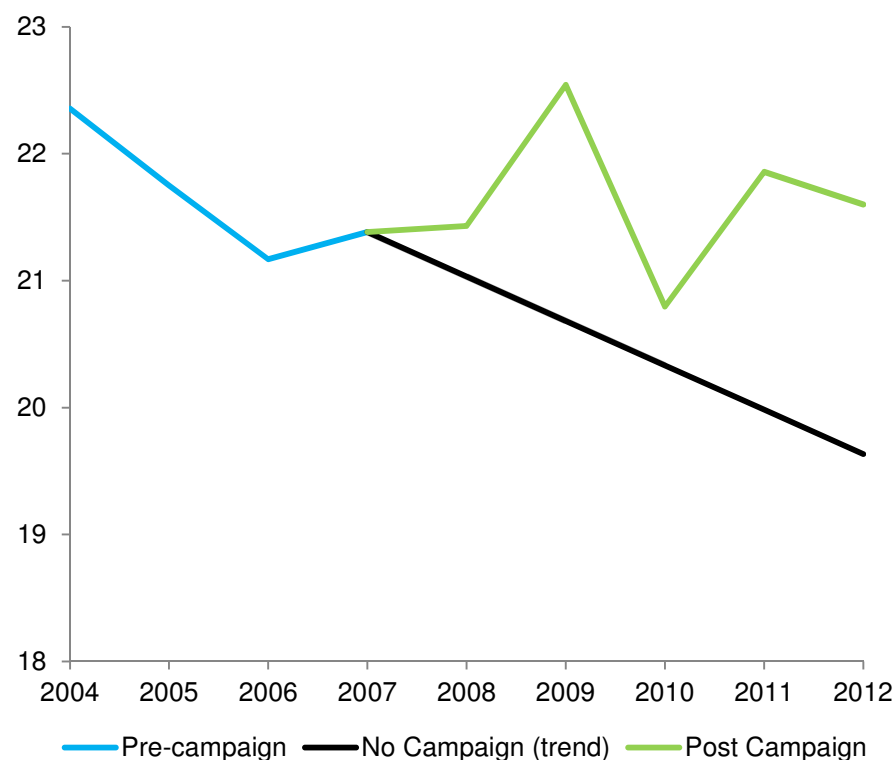
3. Historical demand and trends

– Regulatory allowance versus actual
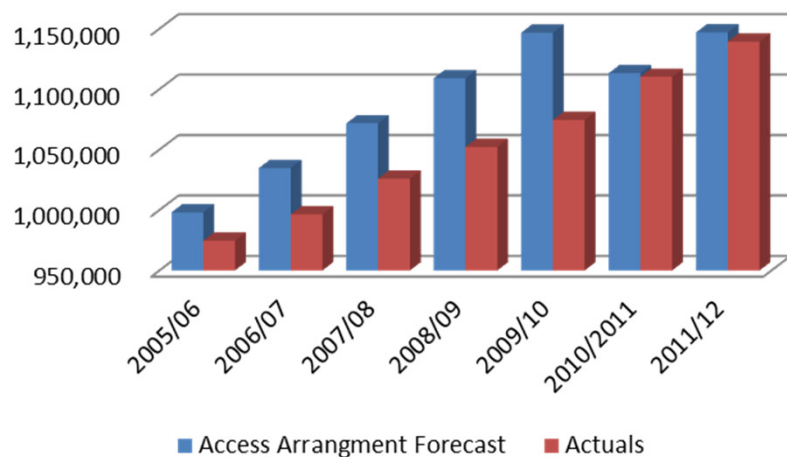
– Historical demand and trends

Regulatory allowance versus actual

- Tariff Customer numbers:
  - Have increased 2.5% per year over the last 7 years
  - However, the regulatory allowance for tariff customer numbers has not been surpassed, but in 2011/12 actual variance to the regulatory allowance is approximately 1% under

- Over last 7 years actual tariff loads (after normalisation) have underperformed against the regulatory allowance, except in 2011/12

- Contract Customer numbers have declined steadily by 3% per year since 2005/06:
  - Contract Customer numbers surpassed the regulatory allowance only in 2005/06, but have since been under
  - Actual Contract Loads have underperformed against the regulatory allowance in all years. 2011/12 loads were significantly below the regulatory allowance due to an unforeseen temporarily closing of a major customer
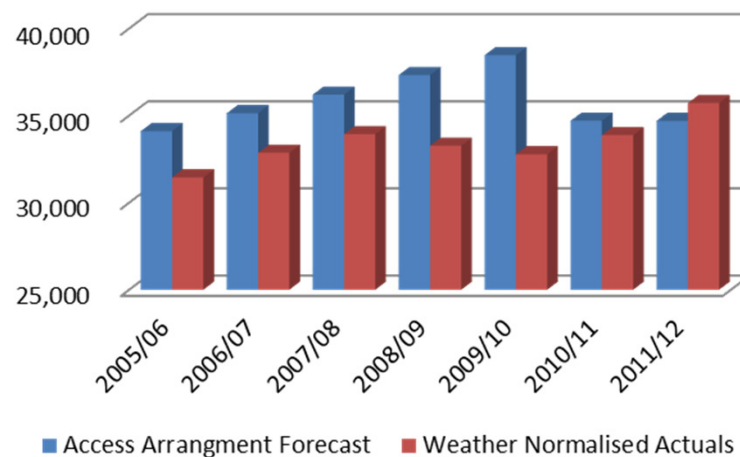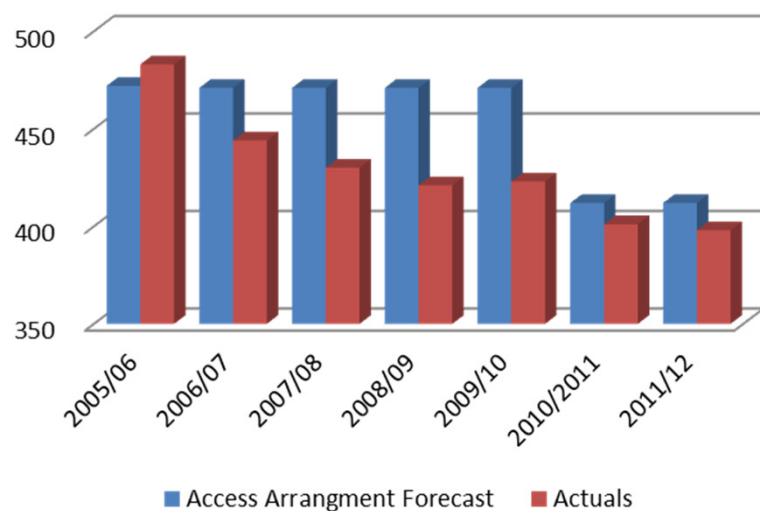
Historical demand and trends

Historical demand and trends cont.
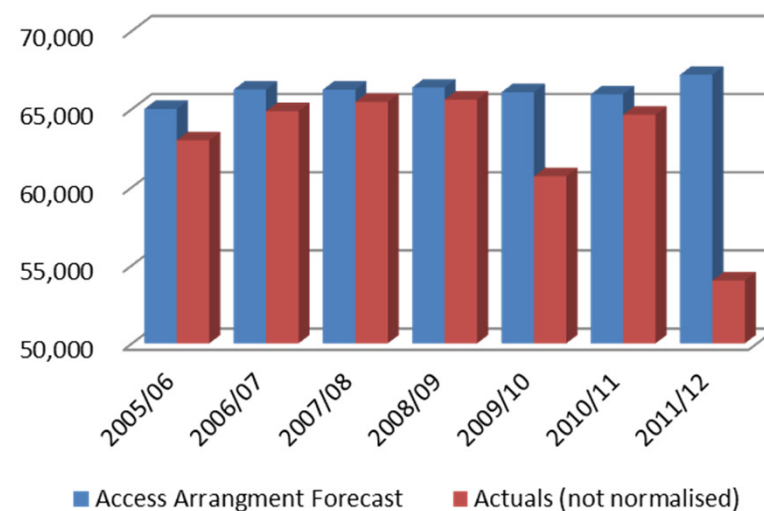
Historical demand and trends cont.
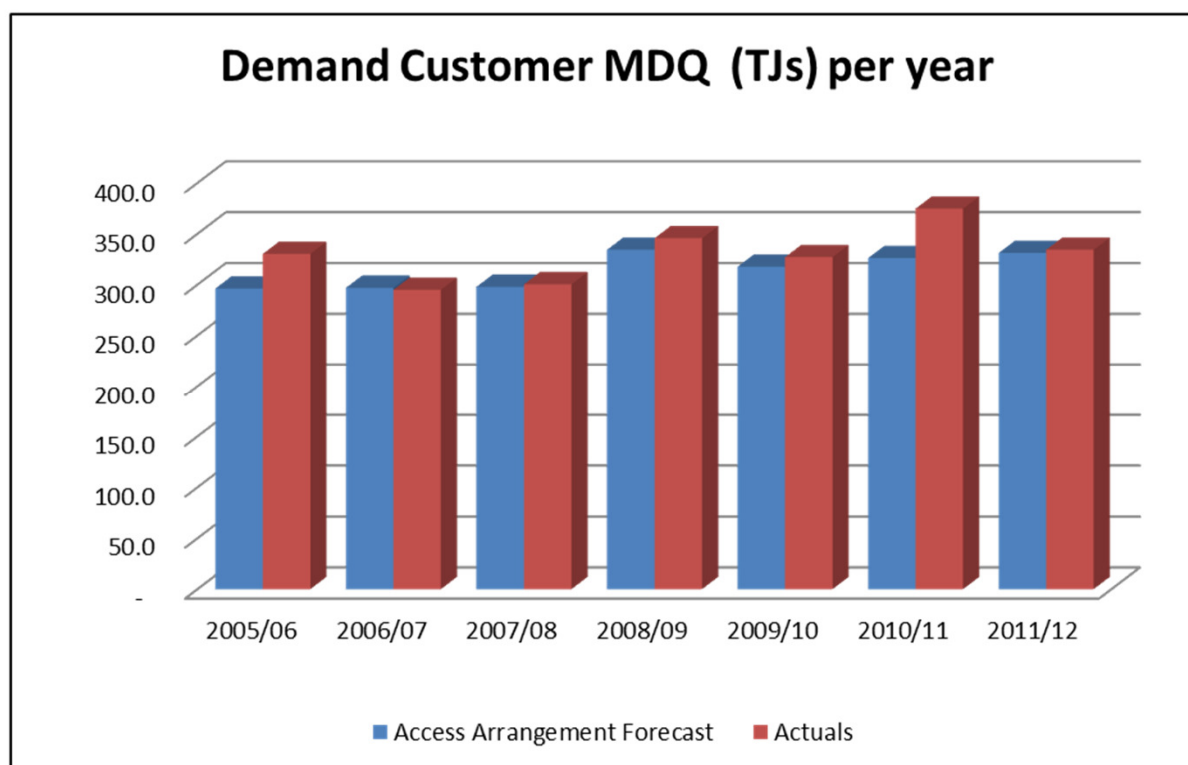
APPENDICES

Market segments

|	Contract market	Tariff market
Customers	398	1,139,313
Volume (PJ)	54.02	36.86

Source: 2012 RIN data; volumes not weather normalised

Average annual energy spend

- Despite the varying tariff schemes in place across the country, and variations in households' heating and cooling requirements across climate zones, there is little difference between state and territory households' expenditure on electricity, gas, heating oil and wood
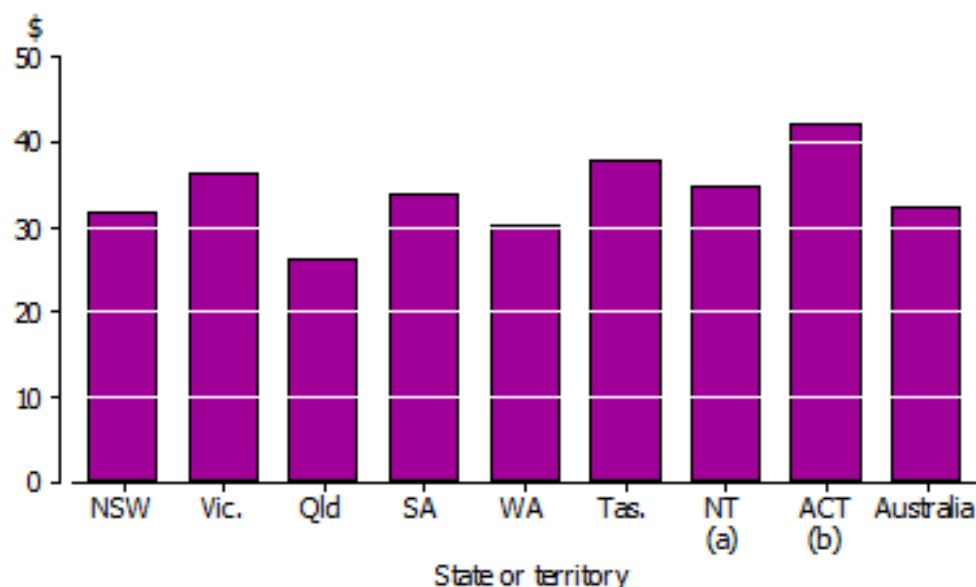
AVERAGE WEEKLY EXPENDITURE ON ELECTRICITY, GAS, HEATING OIL AND WOOD BY STATE AND TERRITORY - 2009-10
(a) Households in collection districts defined as Very Remote or Indigenous communities are excluded, accounting for about 23% of the population in the NT.
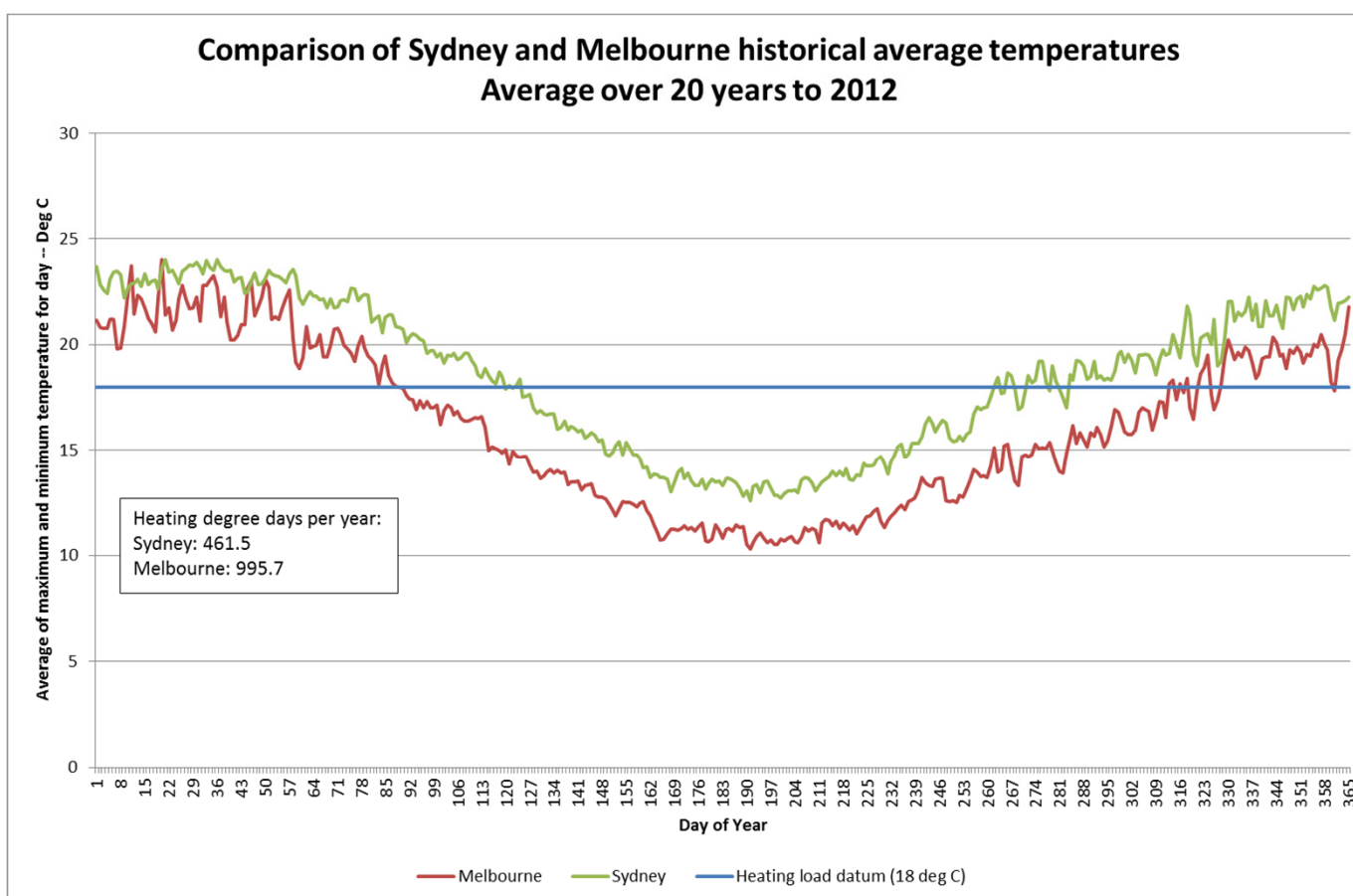(b) As the balance of state is not available for the ACT, estimates for the ACT are the same as those for Canberra.
Source: ABS Households Expenditure Survey, Australia: Summary of Results, 2009-10 (cat. no. 6530.0)

Sydney and Melbourne historical average temperatures

Comparison of Sydney and Melbourne historical average temperatures
Average over 20 years to 2012

Heating degree days per year:
Sydney: 461.5
Melbourne: 995.7

NSW weather trend

Sydney Heating Degree Days Rolling 6 Year Average